

India aims to become the main bioinformatics hub

India announced on June 9 that it is planning to combine its strengths in information technology (IT) and biotechnology to build its first Biotech-IT park, and position itself as a global hub for bioinformatics. But the challenge for Indian bioinformatics companies is to create proprietary products that will generate high-margin revenues and therefore contribute to the economic growth of the country.

Software and IT services represented one of the fastest growing sectors of the economy in the past decade with an average growth of 50% per year and \$10.6 billion of exports during the fiscal year 2003–2004. “The Bio-IT Park would be the launch pad for bioinformatics industry as STPs [software technology parks] were for IT,” says Satyanarain Zindal, a senior official in the government department of information technology (DIT) in New Delhi.

Candidate cities to host the new park, estimated to cost Rs.2,500 (\$54) million, are Bangalore, Hyderabad and the new site of the Center for Genomics and Integrative Biology in New Delhi. The proximity of both IT and biotechnology industries in each of these centers of economic activity is expected to help foster the development of bioinformatics.

But finding the right niche may be critical to ensure success of the park. Considering the high obsolescence of software tools, says Kunchur Guruprasad, head of bioinformatics at the Center for Cellular and Molecular Biology in Hyderabad, the success of the park would depend on the type of products that come out of it. Some believe that providing services is the way to start. “You have to walk before you run,” cautions Mathukumalli Vidyasagar, vice president of service bioinformatics service company Tata Consulting Services in Hyderabad, adding: “you have to do some contract research before being able to come up with products.”

Unlike STPs, the new Bio-IT Park will be expected to focus on more than just low-margin service work attracting cost-conscious foreign companies. Instead, the park is anticipated to foster the creation of high-margin patented products. Such products are designed to help companies save time and therefore reduce the costs of drug development. For example, bioinformatics solutions could help biotech companies in identifying novel biomarkers

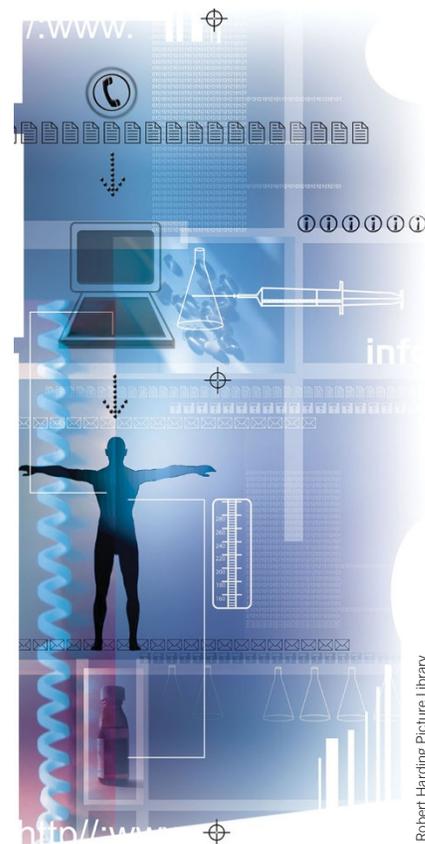
and drug targets based on a computational approach to analyze masses of biological data pouring out from genomic and proteomic studies.

Another potential niche would be for the park to specialize in solving complex problems to reach the high-end of the biotech consumer market. Dorairajan Balasubramanian, chairman of the biotech advisory committee of the state of Andhra Pradesh government, suggests the park would do well by attacking problems in systems biology, which looks at whole organs instead of just genes and proteins.

Already some companies in India have made forays locally and into the global market. In June this year, for example, Strand Genomics from Bangalore licensed its microarray gene expression analysis software to antibody company Abgenix in Fremont, California. And Lion Bioscience Research in Cambridge, Massachusetts, licensed NetPro, a proprietary protein interaction database of Molecular Connections, in Bangalore, to conduct drug target identification research exclusively for Bayer, Leverkusen, Germany.

Would biotech companies choose to reduce their costs by outsourcing to India? James Featherstone, head of European consulting at WoodMackenzie’s life science practice in London explains that biotech companies outsourcing in India fear that their IP may not be adequately protected. Companies have still to be convinced that the Indian government will enforce the new patent protection regime in place from January 2005, as part of the Trade Related aspects of Intellectual Property rights (TRIPS) requirements from the World Trade Organization. Until now, uncertainty concerning IP protection has prompted companies to outsource tasks in the drug discovery process up to a certain level and analyze in-house data that are more proprietary.

Another concern, according to Roy Drucker, general manager at outsourcing consultancy Technomark Consulting Services in London, which has done a lot of work in India, is that bioinformatics companies may well have the expertise and skills in IT but may sometimes lack the biological expertise. As a result, they may not be in a position to provide solutions reflecting a true understanding of the biological issues when solving bioinformatics problems.



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India is planning to combine its strength in IT and biotech to create a new Bio-IT park.

Despite skepticism, signs of a new star rising on India’s industrial horizon are already there. According to the Confederation of Indian Industry (CII), bioinformatics provides the biggest opportunity for the Indian IT industry since the work required for the millennium. “If the industry and government work together it is possible to achieve a 5% global market share [of bioinformatics] by 2005, [which is] a \$3 billion opportunity in India,” says a CII study published in February 2004. Ashok Kolaskar, who chairs the Department of Biotechnology task force on bioinformatics, is confident of the Indian bioinformatics industry earning \$2.5 billion by 2008. “It is already earning \$400 million and pushing it six times is not unrealistic,” he says.

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